

ADVANCED DATA VISUALIZATION

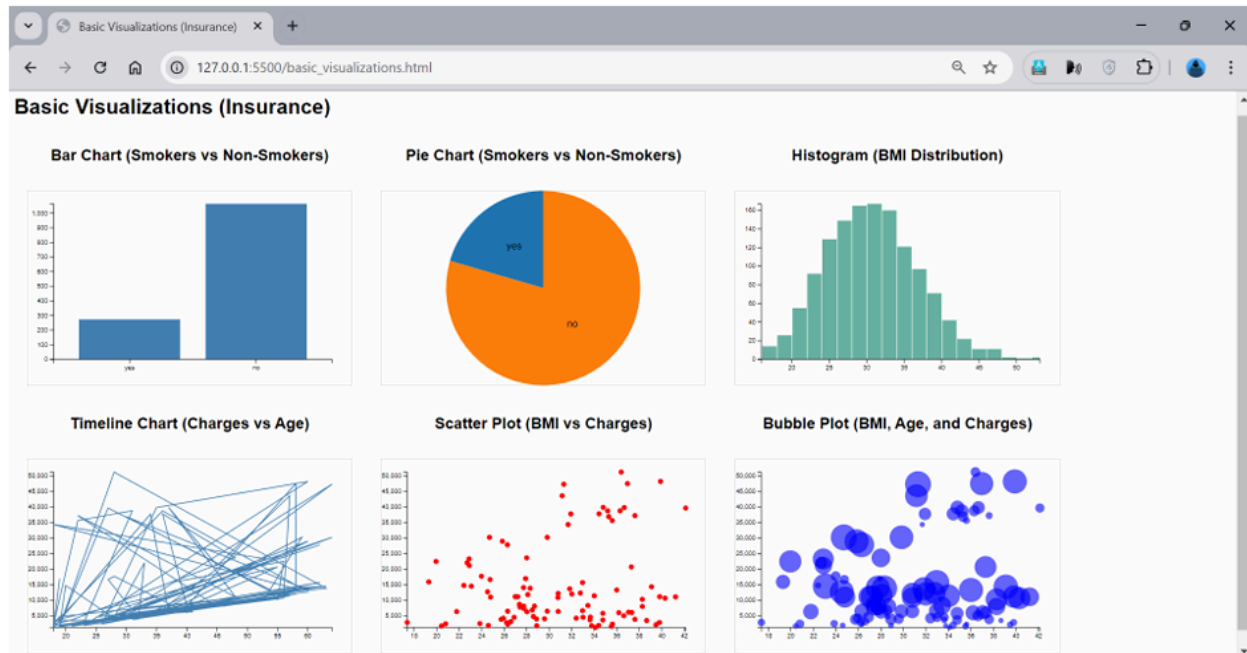
EXPERIMENT 7

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BATCH: L

CSE - DS



1. Bar Chart (Smokers vs Non-Smokers):

- **Description:** Compares the number of smokers and non-smokers.
- **Observations:**
 - Non-smokers outnumber smokers significantly.
 - Indicates a healthier demographic in terms of smoking habits.

2. Pie Chart (Smokers vs Non-Smokers):

- **Description:** Shows the proportion of smokers versus non-smokers.
- **Observations:**
 - A large majority are non-smokers, as indicated by the dominant orange section.

- Smokers constitute a much smaller segment of the population.
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3. Histogram (BMI Distribution):

- **Description:** Displays the frequency distribution of Body Mass Index (BMI) values.
 - **Observations:**
 - The BMI distribution is roughly bell-shaped, with most values concentrated around the center.
 - Indicates a normal distribution, with a few outliers on either end.
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4. Timeline Chart (Charges vs Age):

- **Description:** Visualizes the insurance charges across different age groups over time.
 - **Observations:**
 - Insurance charges generally increase with age.
 - Some variability is observed, likely due to other factors like health conditions or smoking status.
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5. Scatter Plot (BMI vs Charges):

- **Description:** Examines the relationship between BMI and insurance charges.
 - **Observations:**
 - Higher BMI values are often associated with higher charges.
 - Outliers with high charges at lower BMI values suggest the influence of additional factors, such as smoking or pre-existing conditions.
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6. Bubble Plot (BMI, Age, and Charges):

- **Description:** Combines three variables: BMI, age, and charges (represented by bubble size).
- **Observations:**
 - Larger bubbles (higher charges) are generally associated with higher BMI and older age.

- **Younger individuals with lower BMI tend to have smaller bubbles (lower charges).**
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General Insights:

- **Smoking Impact:** Smokers form a smaller population but may incur higher charges due to associated health risks.
- **BMI and Charges:** There is a clear trend of higher BMI and age correlating with higher insurance charges.
- **Risk Factors:** Age, BMI, and smoking status significantly influence insurance costs.